

REMARKS

Claims 1 through 8 and 19 through 24 are in the application, with Claim 1 having been amended, Claims 9 through 18 having been cancelled, and with Claims 19 through 24 having been cancelled. Claims 1 and 19 are independent. No new matter has been added. Reconsideration and further examination are respectfully requested.

Claims 1 through 5 and 8 stand rejected under 35 U.S.C. § 103 over U.S. Patent No. 6,451,626 (“Lin”) in view of U.S. Patent No. 6,433,425 (“Sarkhel”); Claims 6 and 10 stand rejected under § 103 over Lin in view of Sarkhel, and further in view of U.S. Patent No. 6,414,849 (“Chiu”); Claims 7 and 15 stand rejected under § 103 over Lin in view of Sarkhel, and further in view of U.S. Patent No. 6,662,442 (“Matsui”); and Claims 16 through 18 stand rejected under 35 U.S.C. § 102 as allegedly being anticipated by U.S. Publication No. 2004/0012934 (“Jafari”).

Claim 1

Amended independent Claim 1 concerns a method. The method includes directing first energy to only a first interconnect element, the first interconnect element contacting a first conductive contact of a first device and a second conductive contact of a second device, wherein the first interconnect element forms a first electrical connection between the first conductive contact and the second conductive contact based at least in part on the first energy. After directing the first energy to only the first interconnect element, the method includes directing second energy to only a second interconnect element, the second interconnect element contacting a third conductive contact of the first device and a fourth conductive contact of the second device. The second interconnect element is to form a second electrical connection between the third conductive contact and the fourth conductive contact based at least in part on the second energy.

None of the art of record is seen to disclose or to suggest the foregoing features of amended independent claim 1. In particular, the art of record is not seen to disclose or to suggest at least directing first energy to only a first interconnect element and, after directing the first

energy to only the first interconnect element, directing second energy to only a second interconnect element.

The outstanding Office Action alleges that Lin describes “directing a laser to a first interconnect element” and “directing a laser to a second interconnect element”. Applicants submit that such a description does not satisfy the language of Claim 1. In particular, Claim 1 requires directing first energy to only a first interconnect element and directing second energy to only a second interconnect element. As described in the present specification, such a feature may provide reflow of interconnect elements without exposing attached devices to potentially damaging temperatures.

In contrast, Lin describes generally heating all solder paste portions 138 along with chip 110 to create hardened solder joints 106. Lin indicates that this general heating may be provided by a convection oven, IR continuous belt reflow, hot nitrogen gas or a laser beam. See col. 10, l. 3 through 22. Accordingly, Lin reflows solder paste portions 138 by heating of all solder paste portions 138 simultaneously. Nowhere can Lin be seen to disclose or suggest directing first energy to only a first interconnect element and, after directing the first energy to only the first interconnect element, directing second energy to only a second interconnect element.

The other references have been reviewed and are not seen to contain any disclosure that would remedy the deficiencies in Lin. Sarkhel, for example, was cited as teaching “a first and second energy applied on the solder interconnects.” Upon review, the cited portion of Sarkhel describes the selection of reflow temperatures that are suitable to reflow interconnects having a first composition without reflowing interconnects having a second composition. It is noted that the selection of such a reflow temperature is required because all interconnects are simultaneously exposed to the reflow temperature. Accordingly, Sarkhel cannot be seen to disclose or suggest directing first energy to only a first interconnect element and, after directing the first energy to only the first interconnect element, directing second energy to only a second interconnect element.

Amended independent Claim 1 is believed to be in condition for allowance. Newly-added independent Claim 19 relates to a method having several features in common with amended independent Claim 1. Claim 19 is therefore believed to be allowable for at least the reasons given above with respect to Claim 1.

C O N C L U S I O N

The outstanding Office Action presents a number of characterizations regarding each of the applied references, some of which are not directly addressed herein because they are not related to the rejections of the independent claims. Applicants do not necessarily agree with the characterizations and reserve the right to further discuss those characterizations.

For at least the reasons given above, it is submitted that the entire application is in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience. Alternatively, if there remains any question regarding the present application or any of the cited references, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is cordially requested to contact the undersigned via telephone at (203) 972-0049.

Respectfully submitted,

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Date


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